

Software Communications Architecture Specification

ATTACHMENT 1 TO APPENDIX D

DOCUMENT TYPE DEFINITIONS FOR THE DOMAIN PROFILE

Revision Summary

1.0.1	original release of Attachment 1
1.1	Incorporate approved Change Proposals, numbers 162, 163, 164, 167, 168, 169, 170, 171, 172, 173, 174, 202, 203, 214.
2.0	Incorporate approved Change Proposals, numbers 270, 309, 318, 321; reorder DTDs to match App. D.
2.1	Incorporate approved Change Proposals, numbers 88, 142, 183, 306, 355, 468, 477.

Change Proposals are controlled by the JTRS Change Control Board. CPs incorporated into the SCA are considered "closed" and can be seen on the JTRS web site at:

www.jtrs.sarda.army.mil/docs/documents/sca_ccb.html

Table of Contents

Attachment 1 Document Type Definitions.....	1-1
Software Package Descriptor	1-1
Device Package Descriptor	1-4
Property File	1-6
Software Assembly Descriptor.....	1-11
Device Configuration Descriptor	1-15
DomainManager Configuration Descriptor	1-19
Profile Descriptor	1-20

ATTACHMENT 1 DOCUMENT TYPE DEFINITIONS

The following are the Document Type Definitions (DTDs) for the Domain Profile. This text file of the DTD is available electronically.

SOFTWARE PACKAGE DESCRIPTOR

```
<!ELEMENT softpkg
  ( title?
    , author+
    , description?
    , propertyfile?
    , descriptor?
    , implementation+
    , usesdevice*
  )>
<!ATTLIST softpkg
  id          ID      #REQUIRED
  name        CDATA   #REQUIRED
  type        (sca_compliant | sca_non_compliant) "sca_compliant"
  version     CDATA   #IMPLIED >

<!ELEMENT localfile EMPTY>
<!ATTLIST localfile
  name        CDATA   #REQUIRED>

<!ELEMENT propertyfile
  (localfile
  )>
<!ATTLIST propertyfile
  type        CDATA   #IMPLIED>

<!ELEMENT title (#PCDATA)>

<!ELEMENT pkgtype (#PCDATA)>

<!ELEMENT author
  ( name*
    , company?
    , webpage?
  )>

<!ELEMENT name (#PCDATA)>

<!ELEMENT company (#PCDATA)>

<!ELEMENT webpage (#PCDATA)>

<!ELEMENT description (#PCDATA)>

<!ELEMENT descriptor
  (localfile
  )>
```

```
<!ATTLIST descriptor
    name          CDATA #IMPLIED>

<!ELEMENT implementation
  ( description?
  , propertyfile?
  , code
  , compiler?
  , programminglanguage?
  , humanlanguage?
  , runtime?
  , ( os
      | processor
      | dependency
      )+
  , usesdevice*
  )>

<!ATTLIST implementation
  id           ID      #REQUIRED
  aepcompliance (aep_compliant | aep_non_compliant) "aep_compliant">

<!ELEMENT code
  ( localfile
  , entrypoint?
  , stacksize?
  , priority?
  )>
<!ATTLIST code
  type         CDATA #IMPLIED>

<!ELEMENT entrypoint (#PCDATA)>

<!ELEMENT stacksize (#PCDATA)>

<!ELEMENT priority (#PCDATA)>

<!ELEMENT compiler EMPTY>
<!ATTLIST compiler
    name          CDATA #REQUIRED
    version       CDATA #IMPLIED>

<!ELEMENT programminglanguage EMPTY>
<!ATTLIST programminglanguage
    name          CDATA #REQUIRED
    version       CDATA #IMPLIED>

<!ELEMENT humanlanguage EMPTY>
<!ATTLIST humanlanguage
    name          CDATA #REQUIRED >

<!ELEMENT os EMPTY>
<!ATTLIST os
    name          CDATA #REQUIRED
    version       CDATA #IMPLIED>
```

```
<!ELEMENT processor EMPTY>
<!ATTLIST processor
    name          CDATA #REQUIRED>

<!ELEMENT dependency
  ( softpkgref
  | propertyref
  )>
<!ATTLIST dependency
    type          CDATA #REQUIRED>

<!ELEMENT runtime EMPTY>
<!ATTLIST runtime
    name          CDATA #REQUIRED
    version       CDATA #IMPLIED>

<!ELEMENT propertyref EMPTY>
<!ATTLIST propertyref
    refid         CDATA #REQUIRED
    value         CDATA #REQUIRED>

<!ELEMENT softpkgref
  ( localfile
  , implref?
  )>

<!ELEMENT implref EMPTY>
<!ATTLIST implref
    refid         CDATA #REQUIRED>

<!ELEMENT usesdevice
  ( propertyref+
  )>
<!ATTLIST usesdevice
    id            ID      #REQUIRED
    type          CDATA #REQUIRED>
```

DEVICE PACKAGE DESCRIPTOR

```
<!ELEMENT devicepkg
  ( title?
  , author+
  , description?
  , hwdeviceregistration
  )>
<!ATTLIST devicepkg
  id          ID      #REQUIRED
  name        CDATA   #REQUIRED
  version     CDATA   #IMPLIED >

<!ELEMENT title (#PCDATA)>

<!ELEMENT author
  ( name*
  | company?
  | webpage?
  )>

<!ELEMENT name (#PCDATA)>

<!ELEMENT company (#PCDATA)>

<!ELEMENT webpage (#PCDATA)>

<!ELEMENT description (#PCDATA)>

<!ELEMENT hwdeviceregistration
  ( propertyfile?
  , description
  , manufacturer
  , modelnumber
  , deviceclass
  , childhwdevice*
  )>
<!ATTLIST hwdeviceregistration
  id          ID      #REQUIRED
  name        CDATA   #REQUIRED
  version     CDATA   #IMPLIED>

<!ELEMENT propertyfile
  ( localfile
  )>
<!ATTLIST propertyfile
  type        CDATA   #IMPLIED>

<!ELEMENT localfile EMPTY>
<!ATTLIST localfile
  name        CDATA   #REQUIRED>

<!ELEMENT manufacturer (#PCDATA)>

<!ELEMENT modelnumber (#PCDATA)>
```

```
<!ELEMENT deviceclass
  (class+
 )>

<!ELEMENT class (#PCDATA)>

<!ELEMENT childhwdevice
  (hwdeviceregistration
  |devicepkgref
 )>

<!ELEMENT devicepkgref
  (localfile
 )>
<!ATTLIST devicepkgref
  type      CDATA #IMPLIED>
```

PROPERTY FILE

```
<!ELEMENT properties
  ( description?
  , simple
  | simplesequence
  | test
  | struct
  | structsequence)+

)>

<!ELEMENT simple
  ( description?
  , value?
  , units?
  , range?
  , enumerations?
  , kind*
  , action?
  )>

<!ATTLIST simple
  id      ID                      #REQUIRED
  type   ( boolean    | char       | double   | float
          | short     | long      | objref   | octet
          | string    | ulong     | ushort   #REQUIRED
  name   CDATA                   #IMPLIED
  mode   ( readonly  | readwrite | writeonly) "readwrite">

<!ELEMENT description (#PCDATA)>

<!ELEMENT value (#PCDATA)>

<!ELEMENT units (#PCDATA)>

<!ELEMENT range EMPTY>
<!ATTLIST range
  min      CDATA #REQUIRED
  max      CDATA #REQUIRED>

<!ELEMENT enumerations
  ( enumeration+
  )>

<!ELEMENT enumeration EMPTY>
<!ATTLIST enumeration
  label    CDATA #REQUIRED
  value    CDATA #IMPLIED>

<!ELEMENT kind EMPTY>
<!ATTLIST kind
  kindtype  ( allocation | configure | test | execparam | factoryparam )
  "configure">

<!ELEMENT action EMPTY>
<!ATTLIST action
  type   ( eq  | ne  | gt  | lt  | ge  | le  | external ) "external">
```

```
<!ELEMENT simplesequence
  ( description?
  , values?
  , units?
  , range?
  , kind*
  , action?
  )>

<!ATTLIST simplesequence
  id      ID                      #REQUIRED
  type   ( boolean | char    | double | float
          | short   | long    | objref | octet
          | string  | ulong   | ushort ) #REQUIRED
  name   CDATA                   #IMPLIED
  mode   (readonly | readwrite | writeonly) "readwrite">

<!ELEMENT values
  ( value+>
 )>

<!ELEMENT test
  ( description
  , inputValue?
  , resultValue
  )>

<!ATTLIST test
  id      CDATA #REQUIRED>

<!ELEMENT inputValue
  ( simple+>
 )>

<!ELEMENT resultValue
  ( simple+>
 )>

<!ELEMENT struct
  ( description?
  , simple+
  , configurationkind?
  )>

<!ATTLIST struct
  id      ID      #REQUIRED
  name   CDATA   #IMPLIED
  mode   (readonly | readwrite | writeonly) "readwrite">

<!ELEMENT configurationkind EMPTY>
<!ATTLIST configurationkind
  kindtype  (configure | factoryparam) "configure">

<!ELEMENT structsequence
  ( description?
  , structvalue+
  , configurationkind?
  )>
```

MSRC-5000SCA
Attachment 1 to Appendix D
rev. 2.1

```
<!ATTLIST structsequence
  id          ID      #REQUIRED
  structrefid CDATA   #REQUIRED
  name        CDATA   #IMPLIED
  mode        (readonly | readwrite | writeonly)  "readwrite">

<!ELEMENT structvalue
  (simpliceref+
 )>

<!ELEMENT simpliceref EMPTY>
<!ATTLIST simpliceref
  refid      CDATA   #REQUIRED
  value      CDATA   #REQUIRED>
```

SOFTWARE COMPONENT DESCRIPTOR

```
<!ELEMENT softwarecomponent
  ( corbaversion
  , componentrepid
  , componenttype
  , componentfeatures
  , interfaces
  , propertyfile?
 )>

<!ELEMENT propertyfile
  ( localfile
  )>
<!ATTLIST propertyfile
  type      CDATA #IMPLIED>

<!ELEMENT localfile EMPTY>
<!ATTLIST localfile
  name      CDATA #REQUIRED>

<!ELEMENT corbaversion (#PCDATA)>

<!ELEMENT componentrepid EMPTY>
<!ATTLIST componentrepid
  repid      CDATA #REQUIRED>

<!ELEMENT componenttype (#PCDATA)>

<!ELEMENT componentfeatures
  ( supportsinterface*
  , ports
  )>

<!ELEMENT supportsinterface EMPTY>
<!ATTLIST supportsinterface
  repid      CDATA #REQUIRED
  supportsname    CDATA #REQUIRED>

<!ELEMENT ports
  (provides
  | uses
  )*>

<!ELEMENT provides
  ( porttype*)>
<!ATTLIST provides
  repid      CDATA #REQUIRED
  providesname    CDATA #REQUIRED>

<!ELEMENT uses
  ( porttype*)>
<!ATTLIST uses
  repid      CDATA #REQUIRED
  usesname    CDATA #REQUIRED>
```

```
<!ELEMENT porttype EMPTY>
<!ATTLIST porttype
  type   ( data      | control     |
            responses  | test )    #REQUIRED>

<!ELEMENT interfaces
  ( interface+ )>

<!ELEMENT interface
  ( inheritsinterface* )>
<!ATTLIST interface
  repid      CDATA #REQUIRED
  name       CDATA #REQUIRED>

<!ELEMENT inheritsinterface EMPTY>
<!ATTLIST inheritsinterface
  repid      CDATA #REQUIRED>
```

SOFTWARE ASSEMBLY DESCRIPTOR

```
<!ELEMENT softwareassembly
  ( description?
  , componentfiles
  , partitioning
  , assemblycontroller
  , connections?
  , externalports?
  )>
<!ATTLIST softwareassembly
  id          ID      #REQUIRED
  name        CDATA  #IMPLIED>

<!ELEMENT description (#PCDATA)>

<!ELEMENT componentfiles
  ( componentfile+
  )>

<!ELEMENT componentfile
  ( localfile
  )>
<!ATTLIST componentfile
  id          ID      #REQUIRED
  type        CDATA  #IMPLIED>

<!ELEMENT localfile EMPTY>
<!ATTLIST localfile
  name        CDATA  #REQUIRED>

<!ELEMENT partitioning
( componentplacement
  | hostcollocation
  )*>

<!ELEMENT componentplacement
  ( componentfileref
  , componentinstantiation+
  )>

<!ELEMENT componentfileref EMPTY>
<!ATTLIST componentfileref
  refid      CDATA  #REQUIRED>

<!ELEMENT componentinstantiation
  ( usagename?
  , componentproperties?
  , findcomponent?
  )>
<!ATTLIST componentinstantiation
  id          ID      #REQUIRED>

<!ELEMENT usagename (#PCDATA)>

<!ELEMENT componentproperties
```

```
( simpleref
| simplesequenceref
| structref
| structsequenceref
)+ >

<!ELEMENT findcomponent
( componentresourcefactoryref
| namingservice
)>

<!ELEMENT componentresourcefactoryref
( resourcefactoryproperties?
)>
<!ATTLIST componentresourcefactoryref
refid      CDATA #REQUIRED>

<!ELEMENT devicethatloadedthiscomponentref EMPTY>
<!ATTLIST devicethatloadedthiscomponentref
refid      CDATA #REQUIRED>

<!ELEMENT deviceusedbythiscomponentref EMPTY>
<!ATTLIST deviceusedbythiscomponentref
refid      CDATA #REQUIRED
usesrefid  CDATA #REQUIRED>

<!ELEMENT resourcefactoryproperties
( simpleref
| simplesequenceref
| structref
| structsequenceref
)+ >

<!ELEMENT simpleref EMPTY>
<!ATTLIST simpleref
refid      CDATA #REQUIRED
value      CDATA #REQUIRED>

<!ELEMENT simplesequenceref
(values
)>
<!ATTLIST simplesequenceref
refid      CDATA #REQUIRED>

<!ELEMENT structref
(simpleref+
)>
<!ATTLIST structref
refid      CDATA #REQUIRED>

<!ELEMENT structsequenceref
( structvalue+
)>
<!ATTLIST structsequenceref
refid      CDATA #REQUIRED>

<!ELEMENT structvalue
```

```
(simpref+  
)>  
  
<!ELEMENT values  
( value+  
)>  
  
<!ELEMENT value (#PCDATA)>  
  
<!ELEMENT componentinstantiationref EMPTY>  
<!ATTLIST componentinstantiationref  
refid CDATA #REQUIRED>  
  
<!ELEMENT findby  
( namingservice  
| stringifiedobjectref  
| domainfinder  
)>  
  
<!ELEMENT namingservice EMPTY>  
<!ATTLIST namingservice  
name CDATA #REQUIRED>  
  
<!ELEMENT stringifiedobjectref (#PCDATA)>  
  
<!ELEMENT domainfinder EMPTY>  
<!ATTLIST domainfinder  
type CDATA #REQUIRED  
name CDATA #IMPLIED>  
  
<!ELEMENT hostcollocation  
( componentplacement  
)>  
<!ATTLIST hostcollocation  
id ID #IMPLIED  
name CDATA #IMPLIED>  
  
<!ELEMENT assemblycontroller  
( componentinstantiationref  
)>  
  
<!ELEMENT connections  
)>  
  
<!ELEMENT connectinterface  
, ( providesport  
| componentsupportedinterface  
| findby  
)  
)>  
<!ATTLIST connectinterface  
id ID #IMPLIED>  
  
<!ELEMENT usesport  

```

```
, (componentinstantiationref
| devicethatloadedthiscomponentref
| deviceusedbythiscomponentref
| findby
)
)>

<!ELEMENT usesidentifier (#PCDATA)>

<!ELEMENT providesport
( providesidentifier
, ( componentinstantiationref
| devicethatloadedthiscomponentref
| deviceusedbythiscomponentref
| findby
)
)
)>

<!ELEMENT providesidentifier (#PCDATA)>

<!ELEMENT componentsupportedinterface
( supportedidentifier
, ( componentinstantiationref
| findby
)
)
)>

<!ELEMENT supportedidentifier (#PCDATA)>

<!ELEMENT externalports
( port+
)
)>

<!ELEMENT port
( description?
, (usesidentifier | providesidentifier | supportedidentifier)
, componentinstantiationref
)
)>
```

DEVICE CONFIGURATION DESCRIPTOR

```
<!ELEMENT deviceconfiguration
  ( description?
  , devicemanagersoftpkg
  , componentfiles?
  , partitioning?
  , domainmanager
  , connections?
  , filesystemnames?
  )>
<!ATTLIST deviceconfiguration
  id          ID      #REQUIRED
  name        CDATA   #IMPLIED>

<!ELEMENT description (#PCDATA)>

<!ELEMENT devicemanagersoftpkg
  ( localfile
  )>

<!ELEMENT componentfiles
  ( componentfile+
  )>

<!ELEMENT componentfile
  ( localfile
  )>
<!ATTLIST componentfile
  id          ID      #REQUIRED
  type        CDATA   #IMPLIED>

<!ELEMENT localfile EMPTY>
<!ATTLIST localfile
  name        CDATA   #REQUIRED>

<!ELEMENT partitioning
( componentplacement
  )*>

<!ELEMENT componentplacement
  ( componentfileref
  , deployondevice?
  , compositepartofdevice?
  , devicepkgfile?
  , componentinstantiation+
  )>

<!ELEMENT componentfileref EMPTY>
<!ATTLIST componentfileref
  refid      CDATA   #REQUIRED>

<!ELEMENT deployondevice EMPTY>
<!ATTLIST deployondevice
  refid      CDATA   #REQUIRED>
```

```
<!ELEMENT compositepartofdevice EMPTY>
<!ATTLIST compositepartofdevice
    refid      CDATA #REQUIRED>

<!ELEMENT devicepkgfile
    (localfile
     )>
<!ATTLIST devicepkgfile
    type       CDATA #IMPLIED>

<!ELEMENT componentinstantiation
    ( usagename?
     ,componentproperties?
     )>
<!ATTLIST componentinstantiation
    id        ID      #REQUIRED>

<!ELEMENT usagename (#PCDATA)>

<!ELEMENT componentproperties
    ( simpleref
     | simplesequenceref
     | structref
     | structsequenceref
     )+ >

<!ELEMENT simpleref EMPTY>
<!ATTLIST simpleref
    refid      CDATA #REQUIRED
    value      CDATA #REQUIRED>

<!ELEMENT simplesequenceref
    (values
     )>
<!ATTLIST simplesequenceref
    refid      CDATA #REQUIRED>

<!ELEMENT structref
    (simpleref+
     )>
<!ATTLIST structref
    refid      CDATA #REQUIRED>

<!ELEMENT structsequenceref
    ( structvalue+
     )>
<!ATTLIST structsequenceref
    refid      CDATA #REQUIRED>

<!ELEMENT structvalue
    (simpleref+
     )>

<!ELEMENT values
    ( value+
     )>
```

```
<!ELEMENT value (#PCDATA)>

<!ELEMENT componentinstantiationref EMPTY>
<!ATTLIST componentinstantiationref
    refid CDATA #REQUIRED>

<!ELEMENT domainmanager
    ( namingservice
    | stringifiedobjectref
    )>

<!ELEMENT findBy
    ( namingservice
    | stringifiedobjectref
    | domainfinder
    )>

<!ELEMENT namingservice EMPTY>
<!ATTLIST namingservice
    name      CDATA #REQUIRED>

<!ELEMENT stringifiedobjectref (#PCDATA)>

<!ELEMENT domainfinder EMPTY>
<!ATTLIST domainfinder
    type      CDATA #REQUIRED
    name      CDATA #IMPLIED>

<!ELEMENT filesystemnames
    (filesystemname+
    )>

<!ELEMENT filesystemname EMPTY>
<!ATTLIST filesystemname
    mountname  CDATA #REQUIRED
    deviceid   CDATA #REQUIRED>

<!ELEMENT connections
    ( connectinterface*
    )>

<!ELEMENT connectinterface
    ( usesport
    , ( providesport
    | componentsupportedinterface
    | findBy
    )
    )>

<!ATTLIST connectinterface
    id        ID      #IMPLIED>

<!ELEMENT usesport
    ( usesidentifier
    , ( componentinstantiationref
    | devicethatloadedthiscomponentref
```

```
| deviceusedbythiscomponentref
| findBy
)
) >

<!ELEMENT usesidentifier (#PCDATA)>

<!ELEMENT providesport
( providesidentifier
, ( componentinstantiationref
| devicethatloadedthiscomponentref
| deviceusedbythiscomponentref
| findBy
)
) >

<!ELEMENT providesidentifier (#PCDATA)>

<!ELEMENT componentsupportedinterface
( supportedidentifier
, ( componentinstantiationref
| findBy
)
) >

<!ELEMENT supportedidentifier (#PCDATA)>
```

DOMAINMANAGER CONFIGURATION DESCRIPTOR

```
<!ELEMENT domainmanagerconfiguration
  ( description?
  , domainmanagersoftpkg
  , services?
  )>
<!ATTLIST domainmanagerconfiguration
  id          ID      #REQUIRED
  name        CDATA   #REQUIRED>

<!ELEMENT description (#PCDATA)>

<!ELEMENT devicemanagersoftpkg
  ( localfile
  )>

<!ELEMENT services
  ( service+
  )>

<!ELEMENT service
  ( usesidentifier
  , findby
  )>

<!ELEMENT usesidentifier (#PCDATA)>

<!ELEMENT findby
  ( namingservice
  | stringifiedobjectref
  | domainfinder
  )>

<!ELEMENT namingservice EMPTY>
<!ATTLIST namingservice
  name        CDATA   #REQUIRED>

<!ELEMENT stringifiedobjectref (#PCDATA)>

<!ELEMENT domainfinder EMPTY>
<!ATTLIST domainfinder
  type        CDATA   #REQUIRED
  name        CDATA   #IMPLIED>
```

PROFILE DESCRIPTOR

```
<!ELEMENT profile EMPTY>
<!ATTLIST profile
  filename    CDATA #REQUIRED
  type       CDATA #IMPLIED>
```